

REMARKS

Reconsideration of the application, in view of the arguments presented herein, is respectfully requested.

I. STATUS OF CLAIMS

Claims 1, 3, 4, 6-8, 10-12, 14, 16, 17, 19 and 20 are pending.

II. 35 U.S.C. 103(a) Rejections

Claims 1, 3, 4, 6-8, 10-12, 14, 16, 17, 19 and 20 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,816,098 to Davis ("the Davis patent") in view of U.S. Patent No. 6,508,883 to Tanguay ("the Tanguay patent").

In response, it is respectfully asserted that the combination of Davis and Tanguay fails to teach or suggest all of the features recited in claims 1 and 12.

As conceded by the Examiner, Davis fails to teach or suggest two stages (absorption, annealing or cooling) in a single processing chamber sharing a processing space. (See page 3 of the instant Office Action).

The Examiner cited the Tanguay reference in an attempt to cure the above-mentioned deficiencies of the Davis reference. The Examiner states in the instant Office Action that Tanguay teaches providing a wafer holder in a single processing chamber that comprises two stages for holding two wafers for the purpose of markedly enhancing throughput capacity. (See pages 3-4 of the instant Office Action).

However, it is submitted that the Tanguay reference fails to cure the deficiencies of the Davis reference because even if the teachings of Davis and Tanguay were combined one skilled in the art would still not arrive at a remote plasma enhanced cleaning apparatus, which includes all of the features of the apparatus recited in claims 1 and 12 for at least the reasons discussed below.

It is respectfully submitted that the Tanguay reference at the very least fails to teach or suggest a remote plasma enhanced cleaning apparatus which includes an absorption assembly, anneal assembly and a cooling assembly disposed in a main process chamber, and wherein the absorption assembly comprises a single chamber and the two absorption stages share a processing space within the single absorption chamber, the anneal assembly comprises a single chamber and the two anneal stages share a processing space within the single anneal chamber, and the cooling assembly comprises a single chamber and the two cooling stages share a processing space within the single cooling chamber, as essentially recited in claims 1 and 12.

It is noted that the wafer holders 30, 60 described in Tanguay are not the same as the absorption assembly, anneal assembly or cooling assembly recited in claims 1 and 12 for at least the reasons set forth below. First of all, the absorption, anneal and cooling assemblies recited in claims 1 and 12 each comprise a single chamber and the two stages of each of these assemblies share a processing space within the single chamber of each of these assemblies and wherein each of the absorption, anneal and cooling assemblies are disposed within the main process chamber of the remote plasma enhanced cleaning apparatus.

In contrast, the wafer holder 30, 60 described in Tanguay is not located within a single chamber disposed within a main process chamber as required by claims 1 and 12. In contrast, the wafer holder 30, 60 described in Tanguay is located only within the deposition chamber but not within a single chamber disposed within the deposition chamber as required by claims 1 and 12. (See Figs. 1B, 1C and Cols. 4, lines 66-Col. 5, lines 1-3 of Tanguay).

In addition, the wafer holder 30, 60 described in Tanguay does not have two stages for holding two wafers as required by the absorption, anneal and cooling assemblies of claims 1 and 12. In contrast, the wafer holder 30, 60 described in Tanguay holds wafers within recesses located within the wafer holder. (See Figs. 1B and 1C of Tanguay). The recesses in the wafer holder 30, 60 described in Tanguay are not the same as the stages of the absorption, anneal and cooling stages recited in claims 1 and 12. (See, for example, Figs. 3-5 of the present application which illustrate examples of absorption stages 505, anneal stages 705 and cooling stages 905 which are within the scope of claims 1 and 12.)

In sum, the Tanguay reference at the very least fails to teach or suggest a structure having all of the features of absorption assembly, anneal assembly or cooling assembly recited in claim 1 and 12. As discussed above, the wafer holder described in Tanguay are not the same as the absorption assembly, anneal assembly or cooling assembly recited in claims 1 and 12.

Consequently, for at least the reasons discussed above, even if the teachings of Tanguay were combined with the Davis reference, this combination would still at the very least fail to teach or suggest a remote plasma enhanced cleaning apparatus which includes an absorption assembly, anneal assembly and a cooling assembly disposed in a main process chamber, and wherein the absorption assembly comprises a single chamber and the two absorption stages share a processing space within the single absorption chamber, the anneal assembly comprises a single chamber and the two anneal stages share a processing space within the single anneal chamber, and the cooling assembly comprises a single chamber and the two cooling stages share a processing space within the single cooling chamber, as essentially recited in claims 1 and 12.

Therefore, withdrawal of the above rejection to claims 1 and 12 is respectfully requested. As claims 3, 4, 6, 7, 8, 10 and 11 depend from claim 1 and claims 14, 16, 17, 19 and 20 depend from claim 12, withdrawal of rejections to these dependent claims is likewise requested.

III. CONCLUSION:

In summary, applicants respectfully submit that the instant application is in condition for allowance. Early notice to that end is earnestly solicited.

If a telephone conference would be of assistance in furthering prosecution of the subject application, applicant requests that the undersigned be contacted at the number below.

Respectfully submitted,



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